

INDIAN SKEPTIC

No. 02/05

May 2011



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*It shall be the duty
of every citizen of
India -*

*to develop the
scientific temper,
humanism and the
spirit of inquiry and
reform*

*(Article 51A (h) Part IVA -
Fundamental Duties,
Constitution of India)*

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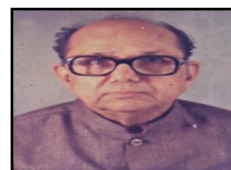
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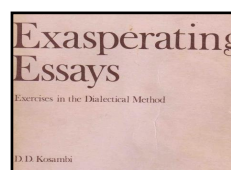


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Justice RA Jahagirdar

(1947 - 2011)

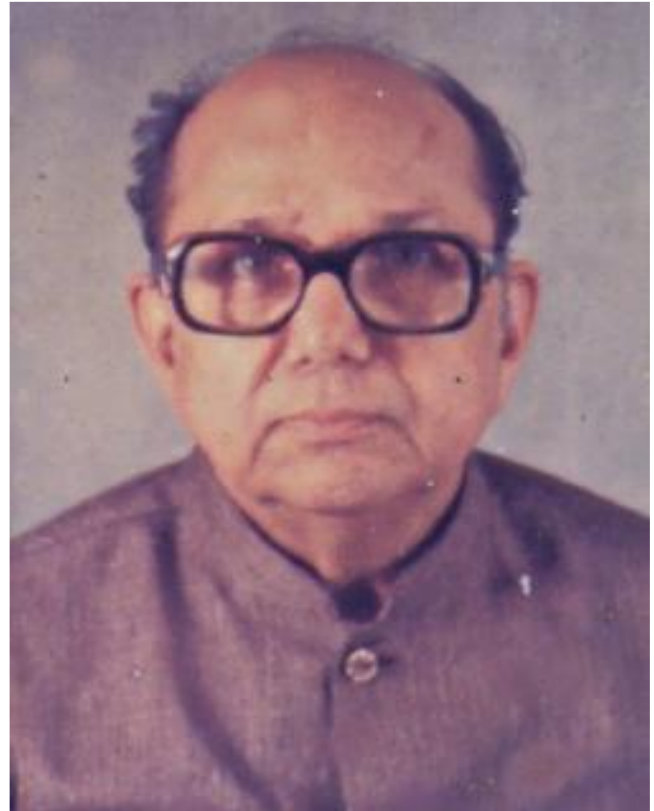
Suman Oak

Justice R.A.Jahagirdar was born on 15th August, celebrated all over India as the Independence Day. He certainly was a truly Independent Spirit. I met him for the first time on the occasion of the birth centenary of M.N.Roy and was very much impressed by his unassuming, friendly and helpful nature. Till then, being a Judge, he refrained from openly airing his views on public platforms. But after his retirement he zealously inculcated rationalist, atheist and humanist values in the youth grabbing every opportunity that came his way.

His judgments had a humane angle. Once, a poor woman was accused of committing suicide and of trying to kill her child along with her. Justice Jahagirdar acquitted her, reasoning that since the woman had shouted for help she must have inadvertently fallen into the well (as she later claimed) and had no intention of killing her daughter. This was necessary because, he said, convicting the woman was convicting the innocent child and destroying her future.

He had a very cheerful and jovial nature with a tinge of childlike mischief in it. On many occasions at CSSC Bandra and other places when snacks were offered, Justice Jahagirdar made it a point to take my photograph while I was eating, telling me he wanted to keep a record of my contribution to the cause!

A few years back he suffered a stroke. He was unconscious for over a week. Dr. Sharad Jahagirdar, his wife tirelessly nursed him day and night, knowing full well the gravity of the situation. He came



out of it and although physically not his original self, mentally he was as alert as ever and had a perfect memory. He did contribute a lot to the rationalist cause after his recovery. His daughter and other relatives used to tease him for refusing to see the 'divine hand' in it. He gave all the credit to his wife and called her a modern 'Savitri'. But sadly enough, this did not last long and within a couple of years his health started deteriorating. The sad end came on the morning of 23rd February 2011.

The movement initiated by Rationalist Association of India and carried out despite insurmountable difficulties by Prof. RD Karve, began tapering off during the post independent era as the newly

independent Indian society being enamored of the welfare state concept, secularism, Nehruvian socialism, Marxism, etc. felt no need for rationalism per se any more. But soon it was realized that all these isms cannot take care of human frailties like greed, hunger for power, lack of empathy, blind belief and fanaticism. Justice Jahagirdar was one of those who realized the importance of rationalism. Unless reason is given the primacy of place in our mental attitude, we cannot get rid of these curses. The magazine "**Reason**" was the house journal of Rationalist Association of India. The publication was very popular among rationalists in India and abroad

religion. It is a mental attitude which unreservedly accepts the supremacy of reason and aims at establishing a system of philosophy and ethics verifiable by experience independent of arbitrary assumptions or authority. He, therefore, advocated rationalism on every platform made available to him. He also believed that decisions in all walks of life political, social, educational and health should be subjected to rationalist thoughts and arguments and should never be based on emotional inspiration.

With his own funds, he founded the 'Rationalist Foundation Trust' in 1995 to

With his own funds, Justice Jahagirdar founded the 'Rationalist Foundation Trust' in 1995 to inculcate rationalism in our society by arranging lectures, publishing printed material and helping individuals who suffer for advocating rationalism. He used to tour all over Maharashtra on the invitation from progressive associations and movements and used their platform to spread rational values in those movements.

right from its first issue, way back, in 1931 until its last one in 1942. Justice Jahagirdar brought out a series of user friendly CDs by scanning the pages of all the old issues, lest the precious intellectual asset be lost forever and distributed the CDs to various educational institutions and universities

He maintained that rationalists do not swear by any set of principles or tenets like other systems of philosophy and therefore do not degenerate into any dogma or

inculcate rationalism in our society by arranging lectures, publishing printed material and helping individuals who suffer for advocating rationalism. He used to tour all over Maharashtra on the invitation from progressive associations and movements and used their platform to spread rational values in those movements. He wrote a large number of articles on various aspects of rationalism and published pamphlets on this subject.

BS

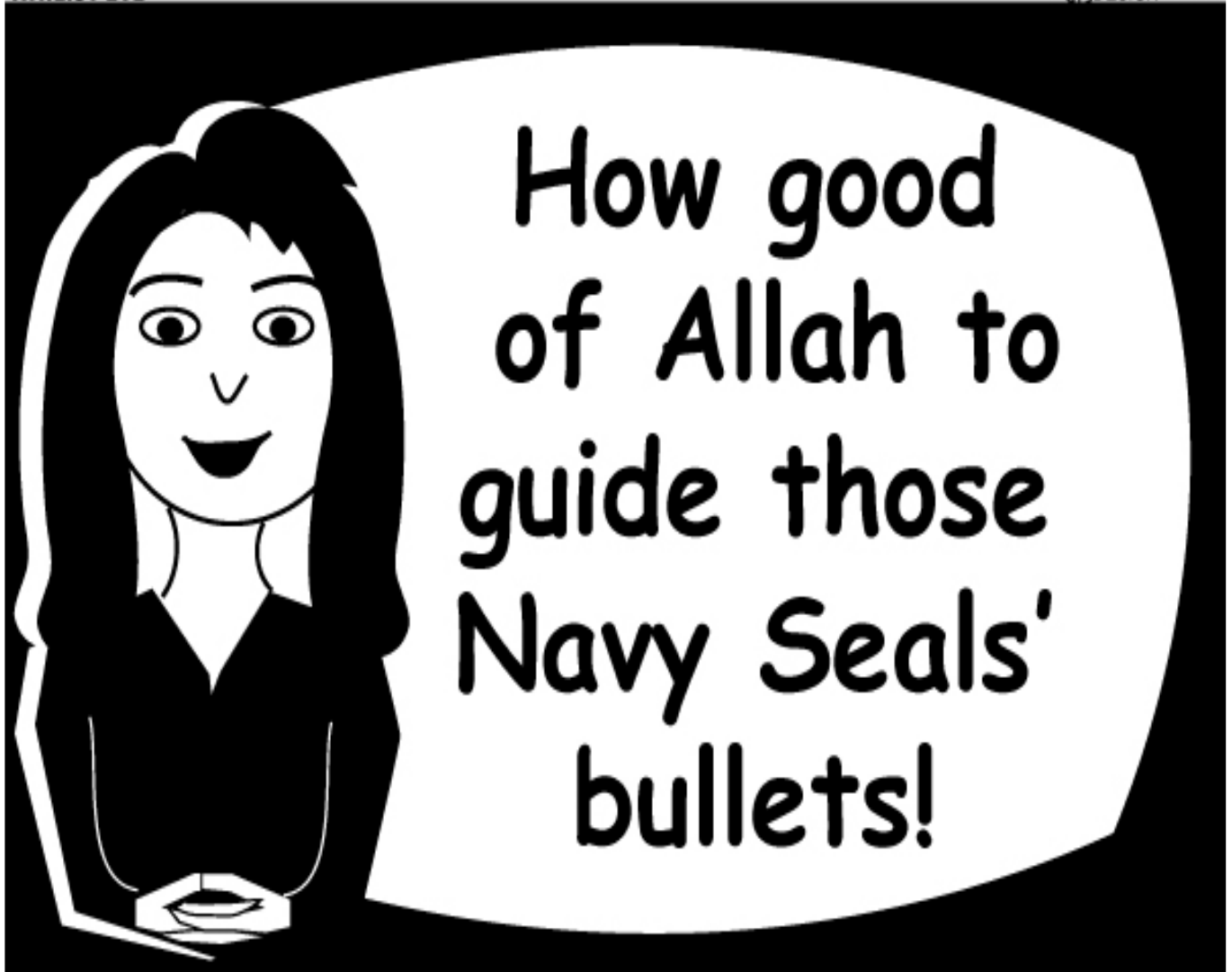
An irrational practice indulged in repeatedly by an individual or a society debilitates that individual and that society.

Justice RA Jahagirdar

Thank Allah!

ATHEIST EVE

TH DESIGN ©2011



Tracie Harris is a graphic designer in Austin, Texas, US. According to the website, <http://www.atheist-community.org/>, "her long, slow recovery from a rabid fundamentalist upbringing led her to the creation of *Atheist Eve*".

Tracie Harris has been publishing *Atheist Eve* since 1 October 2004 and all her earlier works are archived at: <http://www.atheist-community.org/atheisteve/>. *Atheist Eve* is reproduced by **Indian Skeptic** with the author's permission.

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The Phenomenon of Satya Sai Baba

Pushpa M. Bhargava

As the dust after the death of Satya Sai Baba has largely settled, it is time to evaluate him, his work and its implications, objectively and unemotionally, for there is a good deal to be learnt from his life and death.

His rise to fame from an ordinary, even humble background, was based on (i) his claim that he was the reincarnation of Shirdi Sai Baba ; (ii) his claim that he represented divinity, that is, God himself ; (iii) that, consequently, he had powers that no mortal man had ; (iv) that he could provide succour and mental peace to people who came to him with problems of various kinds ; and (v) that he engaged himself in charitable works like opening hospitals and providing potable water to villagers.

Let us examine his above claims and actions one by one. There is not a shred of evidence of rebirth; the very idea of rebirth goes against all of science. Every claimed case of rebirth that has been investigated has been shown to be fake.

As regards his being a reincarnation of God, the only proof he provided was that of performing miracles or miraculous acts. The fact is that he never performed a miracle. In fact, no miracle has ever been performed by any one. All miracles attributed to religious leaders are inventions of the clergy. An example would be that of Mother Teresa whom I met and who never claimed to have performed a miracle in her lifetime. But for her to be canonized after her death two



miracles had to be — and were — invented and attributed to her. Every single act of Sai Baba that was a miracle in the public eye could be performed by ordinary magicians.

My colleague at the Centre for Cellular and Molecular Biology at Hyderabad, Dr. M. W. Pandit, performed them publicly. So did the well-known rationalist, the late Premanand. Invite Dr. Narendra Nayak by sending an e.mail to <narenyn@gmail.com> and he will come and perform for you every miracle that Sai Baba ever claimed to have performed — be it producing a ring or a Japanese watch or sacred ash from nowhere, or his photograph shedding sacred ash.

As regards the miraculous cures he claimed to have performed, we never heard of his failures. A distant cousin of mine had her young son suffering from an incurable disease. Sai Baba who blessed him said he would be cured. When she went back to him after the child's death, Sai Baba told her that he felt it was best for the child to

come to him and that is what he caused to happen; so there was no reason for worry.

The cures that may have been effected were never established to be directly on account of Sai Baba's 'divine' intervention. They were probably natural or psychosomatic, of which numerous examples are known. After all, what do neuropsychologists or psychiatrists do? That is why he never allowed rationalists like Professor Narasimhaiah, former Vice-Chancellor of Bangalore University, or Premanand, to come anywhere near him. It

wealth. Accounting of his enormous wealth has never been transparent.

Sai Baba's unusual accomplishment was to recruit such a large number of the rich and the powerful, politicians and bureaucrats, law-makers, law-keepers, and law dispensers, amongst his followers. Perhaps this is more of a reflection on his followers than him!

Sai Baba's death was not a national tragedy. The national tragedy was his being given a state funeral, a state of official

Sai Baba's death was not a national tragedy. The national tragedy was his being given a state funeral, a state of official mourning being declared, and the country's political leaders — cutting across parties, including the Prime Minister and the Chairman of the NAC — spending precious time and resources to have his last darshan, relegating to the background the nation's constitutional commitment to a scientific temper.

is believed that it were his men who actually once beat up Narasimhaiah.

The late Dr. Y. Nayudamma, the former Director-General of CSIR, who died in an Air India crash near Canada years ago, told me of his visit to Sai Baba with a once ardent follower, Dr. S. Bhagavantam, a former Scientific Adviser to the Defence Minister. Nayudamma stood in front of Sai Baba with folded hands and most respectfully, requested him to produce a blade of grass between his palms. That would have been a miracle. But, instead, Nayudamma had to leave.

As regards his acts of charity, there are innumerable people in the country who engage in such acts to avoid undue attention focussed on their ill-gotten

mourning being declared, and the country's political leaders — cutting across parties, including the Prime Minister and the Chairman of the NAC — spending precious time and resources to have his last darshan, relegating to the background the nation's constitutional commitment to a scientific temper.

BS

Pushpa M. Bhargava is a former Vice-Chairman, National Knowledge Commission, former member, National Security Advisory Board and former founder and Director, Centre for Cellular and Molecular Biology, Hyderabad. His email is: bhargava.pm@gmail.com)

Bhagwan Satya Sai

Faith Marginalizes Reason

Ram Puniyani

The death of Satya Sai Baba, April 24th 2011, has created a big turmoil, not only amongst his followers but also amongst those who had more mundane things to look after, like law and order, visit of VVIP's to Puthaparthi etc. Bhajans (devotional songs) to mourn his death are being held all over in the country and abroad. A large number of those belonging to the list of 'Who is who' of the political, business world, and all those who matter in the country are already there to death of the God. In addition 'who will inherit his vast empire', created singlehandedly out of no where, the way he used to 'create' Vibhuti, gold chains etc. from the thin air is another issue haunting those concerned.

Undoubtedly Bhagwan (God) Sai must have been the God man with a very large following and probably largest wealth amongst the leading Godmen. The latter can not be confirmed, as large part of the wealth controlled by those presented as divine beings, is not known for various reasons. Not only that one does not know if any body can dare to think that Lok Pal type auditing of the wealth of these renunciators of Worldly goods should also be thought of. Such Godmen do demonstrate that you get more when you know how to 'renounce' the World, and of course part of the earnings are put as a part of social service, which is made prominently visible part of activities of these men of God.

Bhagwan's life is mired with multiple



controversies and there are many a dilemmas in understanding him. He was expert in the tricks of Vibhuti production from air and also production of gold chains as well. Earlier he was also 'producing' HMT watches, but that was stopped soon enough as the watches carry the date of manufacture on them. Many a rationalists confronted him by and replicated his tricks and even took out yatras to demonstrate that there is nothing divine about such tricks. They are but clever maneuvers of hand and even magician of repute P.C. Sarkar also challenged the divine nature of these acts. Interestingly he was challenged to produce things like pumpkin, which he refused to do for obvious reasons.

Notwithstanding that his followers were undeterred and the number of his followers cutting across different spheres of life kept swelling. He had proclaimed that he is reincarnation of Sai Baba of Shirdi. As an aside, the transformation of Shirdi Sai to present level of opulent divinity is a phenomenon in itself as Shirdi Sai had

lived a Spartan life under the tree with no material wealth to his credit and currently his idol sits on a Golden throne.

This self proclaimed reincarnation of Shirdi Sai not only must be sitting over one of the wealthiest empires but also went on to proclaim to be a God himself and also prophesied that he will leave this physical body at the age of 96 years. Unfortunately the physical body could not be saved beyond the age of 85 years. Bhagwan who has saved so many lives through divine powers was to be put on ventilators for

own experience. Similarly sexual abuse of young male devotees on the pretext of yogic technique of 'Kundalini raising' also came to light. There was also a case of murder in his living quarters to which Bhagwan himself was a witness, but it was not investigated beyond a point as worldly laws probably don't reach in the realm of spiritual world. The ties of Bhagwan with the one's at the topmost echelons every time ensured that the matters are not pursued, be it the expose' of his tricks or the cases of murder in his living quarters, all were ignored and soon forgotten from

After the death of Bhagwan all those who matter in the echelons of power are making a beeline to visit his mortal remains. One does not know whether these visits by the state functionaries are official or personal, one does not know whether such distinctions are any longer valid in our country, where the Constitution does permit us to practice and preach our faith at personal level but not at political level. State visits to such events in official capacity should be a strict no no. Our Constitution does direct us to promote rational thought; but that again remains ignored as all the rationalists like Abraham Kovoov or Premanand were totally by passed by the mainstream power centers and the issues raised by them remained unanswered and unattended to.

survival for quite some time and he could not be made to live his prophesy.

The remarkable thing about Bhagwan Sai is that he survived many controversies associated with his life. He was charged with Pedophilia, sexual abuse by various sources but such mundane things could not shake the firm faith of ever expanding tribe of followers at home and abroad. Tom Brooke's book (Avatar of the Night: Hidden Side of Sai Baba) described his

public memory.

To be fair to him, Bhagwan Sai is not the first one to proclaim himself as God. There have been the likes of Rajneesh, who for example began his Godly career from Acharya Rajneesh, promoted to Bhagwan Rajneesh and then attained the status of Osho.

After the death of Bhagwan all those who matter in the echelons of power are making

a beeline to visit his mortal remains. One does not know whether these visits by the state functionaries are official or personal, one does not know whether such distinctions are any longer valid in our country, where the Constitution does permit us to practice and preach our faith at personal level but not at political level. State visits to such events in official capacity should be a strict no no. Our Constitution does direct us to promote rational thought; but that again remains ignored as all the rationalists like Abraham Koveer or Premanand were totally bypassed by the mainstream power centers and the issues raised by them remained unanswered and unattended to. There are a couple of films questioning Bhagwan's claims and also accusing him of sexual abuse, 'Guru Busters' and 'Secret Swami' are couple of such films.

Some one interestingly remarked that there are two types of politicians who visit the Bhagwan. First are those who are corrupt and want to hide their sin, and second are those who are sincere and work with the first lot. That apart, the impact of such Baba's, has been a major accompaniment of the politics in the name of religion. This is an era, where the waves of faith are trying to drown the boat of reason, with due support from the incompetent boatman, in the form of state power. The tempest of faith is becoming so overwhelmingly powerful that even

raising the questions against these God man is becoming difficult, else how does one explain that a person calls himself God, does tricks which magicians can replicate with ease and is able to collect huge wealth, part of which is showcased as the charity work. One also knows that to expose the prevalent blind faith is swimming against the tide.

One also concedes that these are also the times when the existential anxiety of a section of population forces them to resort to some support system. In the decades of 1970s it was LSD, now it is the ever proliferating posse of God men. Sai's prediction about his future reincarnations will be a matter of great interest and curiosity, how the God will resurface and how his followers will recognize and worship his new reincarnation will unfold over a period of time. Meanwhile one hopes that some semblance of reason is brought forth while dealing with the innumerable Godmen, flourishing all around like mushrooms.

BS

Dr Ram Puniyani was Professor of Biomedical Engineering at IIT Mumbai. Currently he is associated with various secular initiatives. His website - www.pluralindia.com

I remain committed to most of the values of the Enlightenment. The Enlightenment attacked religion for two reasons: that it was a set of ideological delusions, and that it was system of institutional oppression, with immense powers of persecution and intolerance. Why, then, should I abstain from religious criticism?

Tariq Ali
The Clash of Fundamentalisms
Crusades, Jihads and Modernity, 2002



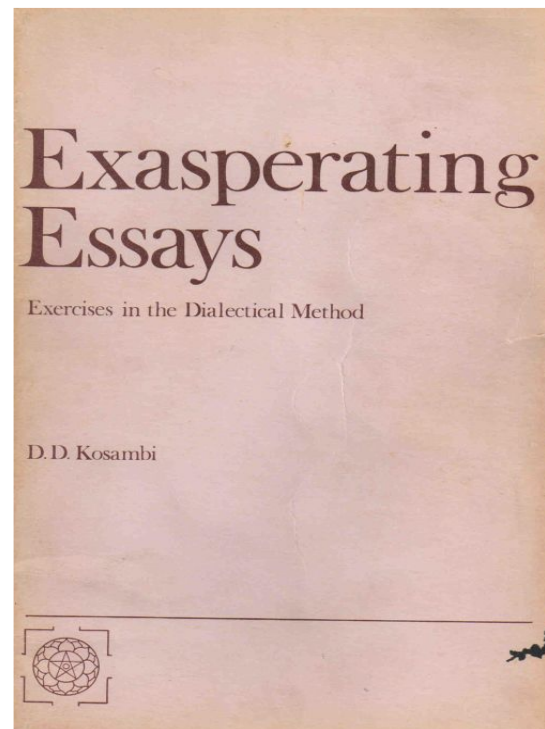
Wide-Ranging Questions about India

Prabhakar Nanawaty

"The whole value of Marxism seems to me to be in the absence of dogmatism, mode of approach, and in the attitude to action... The success or failures of the Russian social experiments do not directly affect the validity of the Marxian theory."

Jawaharlal Nehru, Autobiography

In fact these words were written long before the fall of communist regime in USSR and Jawaharlal Nehru gave a fitting reply to critics of Marxism. However while reading ***Exasperating Essays: Exercises in the Dialectical Method*** written by D.D. Kosambi, a scholar, historian and a mathematician, one will understand what misconceptions the elite Indian society had about various aspects of social life in general and Marxism in particular. In fact D.D. Kosambi took a mammoth task to air his views on aspects like: *Is leadership necessary? Need the individual do nothing because all mass changes are inevitable? Is India really headed towards socialism? Is there a powerful class in India that has ideas contrary to those of our leaders and planning commission? Are the Chinese on the way to socialism? What is meant by freedom of science and of the scientist? Is the 'inner voice' always a safe guide? Why*



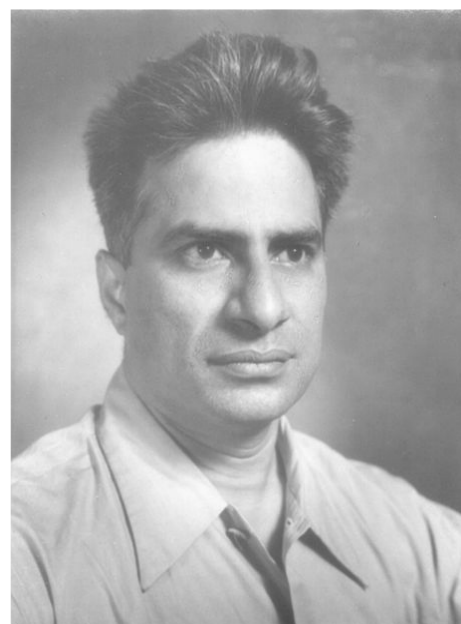
did Buddhism, the most benign of religions fade away from its own country? What is the significance of the 1857 revolt? Is Sanskrit literature free from class bias? Can the factors that impede World Peace be subjugated?

Professor D.D. Kosambi was one of the best known scientists of our country endowed with a truly renaissance versatility. Shunning the lime-light of publicity, he made outstanding contribution in various fields of knowledge, which included mathematics, statistics,

Numismatics, indology, history as well as contemporary socio – political problems. The book under review is a collection of wide ranging essays written during the years 1939 to 1957. As stated in the introduction written by D.D. Kosambi himself, these essays (and a short story "*The Kanpur Road*") still continue to attract studious readers. This introduction tries to clarify the philosophical objections raised by Indian official Marxists (OM). In this connection Dr Savyasachi Bhattacharya, Chairman of the Indian Council of Historical Research and a former Professor at Jawaharlal Nehru University, states that "Indian Official Marxists hereafter called OM" were often displeased with him but he

The author refers to the analogy of crystallization to explain the position of leadership in a social movement. He feels that the entire process of transformation with very little scope for super-saturation should be a natural process and its aftermath. He makes this statement while explaining why the communist revolution was successful in Russia but failed in Germany. He attributes this to leadership of Lenin, though he may not have lead the whole movement alone, but he was a great link in the chain. In religious leadership though one cannot predict about theological understanding of masses, the leadership knows how to stand firm during social unrest. In fact author quotes the

While reading *Exasperating Essays: Exercises in the Dialectical Method* (first published by People's Book House, Poona, 1957) written by D.D. Kosambi, a scholar, historian and a mathematician, one will understand what misconceptions the elite Indian society had about various aspects of social life in general and Marxism in particular.



could not but protest their "theological emphasis on the inviolable sanctity of the current party line, or irrelevant quotations from the classics." In using Marxist method in his own lights, in his effort to construe the civilization in India, in the convergences and divergences between his approach and the nationalist discourse of civilization, D.D. Kosambi has left much for us to try and understand and evaluate. There is a feeling that Marxism has become obsolete in 19th century itself. But D.D. Kosambi compares Marxism with scientific achievements of that era and states that the achievements and Marxism will never become obsolete in any sense.

example of Mahatma Gandhi. In 1930, when Satyagrah got out of hand, he discovered the need for the uplift of Dalits and whole movement was sidetracked.

While reviewing the book *Discovery of India* written by Jawaharlal Nehru while he was in prison, the author appreciates the efforts taken by Nehru to put Indian History in broader perspective. However he feels that the book could not be recommended to the general reader, though Prof Kosambi admires the work of Nehru. Prof Kosambi is perplexed on the statements made on racism and casteism prevailing in India. The author analyses the

mindset of bourgeoisie settled in South Africa which typically wants equality with the Whites but not with the native Africans. Though the equations might have changed in due course of time; however one can trace the remnants of bourgeoisie mentality in day-to-day affairs even now. In fact Prof Kosambi in a prophetic manner predicts that though history had thrust upon Nehru mantle of leadership, the strong and powerfully organized middle class will cleverly exploit him for its own purpose and Nehru's orientation towards Marxism will be bound to change.

In the essay on *'The Class Structure of India'* the author quotes Marx extensively who predicted that the British bourgeoisie will never allow the Indians to reap the fruits of the progress. Author traces the events leading to decline of feudalism in India and how the technological progress metamorphosed the society. In fact hunger, unemployment, epidemic diseases have become permanent and massive features of Indian society in spite of elimination of older property forms and replacing them with vast class of landless farm laborers with no hope of massive industrialization. In reality, with active support of great Indian middle class the Government itself became the biggest capitalist, the main banker, the greatest employer and ultimate refuge of intelligentsia.

According to the author, the greed and avarice of pro-capitalists appears to be one of the reasons for this state of affairs and poor conditions. He finds that civilized moneymakers of advanced capitalist countries are satisfied with 5 % profit margin on their turnover; contrary to this the Indian capitalists' profit range is anywhere between 20 % to 50 %. Indian bourgeoisie had appeared last on the capitalist stage whereas other capitalists have almost abandoned the exploitation and adopted welfare means to satisfy the working class. As such author suggests that India will be in a position if it adopts socialism. However he was afraid of socialism turning into fascism by

empowering a leader to dictate the terms.

It is quite surprising to know that the author, in 1957 itself, predicted that China will be far ahead of any other countries due to its policies and implementation methodologies. According to him the China made progress due to its correct social approach. In fact author compares India with China and points out at the differences in the mindsets of the population at large. For example, birth control propaganda catches on very quickly in China since Chinese know that in their old age they will be comfortable and looked after by the State even when they are childless. Same is not true in India.

In the essay on *'Science and Freedom'* the author criticizes heavily the scientists who think freedom means to do whatever they like while being paid by Universities, business houses or governments. In fact author reminds them that science is no longer 'independent' as it was in its infant stage. Scientists are no more harmless who are toying with toxic chemicals, nuclear materials and complex gadgetries. They are, in fact, part of the society and they don't need any special treatment for their services. There is a well defined social structure and there is a social necessity for scientists too. The author emphasizes that science is not mere accumulation of experimental data; the data should settle some disputed theory and should have some relation with production. Prof Kosambi feels that the science need not be the creation of gifted individuals. In fact, gifted individuals are there in every age and in every field right from the inception of society. There is nothing great about these individuals since they are the product of the environment in which they are growing.

Like any other thinker and scholar, Prof Kosambi too had the curiosity to solve the mystery behind the death of Socrates. He discusses this issue from democratic angle and makes certain severe comments on the social circumstances of that time under

which he was forced to drink the poison.

In the chapter '*The Decline of Buddhism in India*' the author pinpoints the reasons for the fall of Buddhism in India. According to him, though the Buddhism owed its initial success since it fulfilled social need of that era, it started deviating from the principles it had set. During the course of time, Buddhism became uneconomic beyond the reach of common man; monasteries became rich, the inmates were pampered, and monks started behaving like Vedic Brahmins. Buddha became '*Chakravarti*'. The real damage came from within the practitioners and in fact there was a class distinction among Buddhist scholars which ultimately lead the religion to decline in India.

While concluding we may quote Dr. Sabyasachi Bhattacharya in verbatim "*In posing such wide-ranging questions about the civilization in India, Kosambi differed from the general run of academic historians of his times for they rarely engaged in the discourse of civilizations. He was swimming against the current. The specialized and fragmented view in the academic historians' professional writings did not usually add up to that vision of totality that the notion of civilization demands. The fact that Kosambi was never given his due by them in his lifetime can be, arguably, ascribed to their disdain for a non-professional who was not only an avowed Marxist, but also given to talking about a dubious entity called 'civilization.'*"

Prof Kosambi feels that the science need not be the creation of gifted individuals. In fact, gifted individuals are there in every age and in every field right from the inception of society. There is nothing great about these individuals since they are the product of the environment in which they are growing.

The author devoted a full chapter on the great Sanskrit poet, Bhartrihari, quoting the verses in original and their relevance as a great poet of ancient era. As a true democrat, the author once again takes the issue in the essay '*Imperialism and Peace*'. According to him, peace and democracy are two sides of the same coin and one cannot sustain without the other. No one should claim to be another's master whether by divine right, the right of birth, the right of armed conquest, or the right as a rich. Such rights are acquired by fraudulent means and violence against the vast majority of the people and by destroying truth and justice. The imperialism thrives on the profits and this profit benefits a few monopolists.

Exasperating Essays: Exercises in the Dialectical Method

DD Kosambi

Published by Sri R.P. Nene, Pune 411030 (1986)

Pp 99

BS

***Prabhakar Nanawaty* is the editor of *Thought & Action*, the ezine published by Maharashtra Andhashradha Nirmoolan Samiti. Email: pkn.ans@gmail.com**

Skeptic News

Bangalore Vicharavadi Sangha (Bangalore Rationalist Association)

Bangalore Vicharavadi Sangha conducts monthly lectures and discussions on various topics. Those who are interested in attending the programmes conducted by the association may contact:

Dr. M.N.Keshava Rao (Phone: 26690269. Email: keshava_rao@hotmail.com)

A.S.Nataraj (Phone: 26696553. Email: rajsri@bgl.vsnl.net.in)

District Level meetings of Karnataka State Federation of Rationalist Associations are being convened across the state. Those who would like to be part of the organization are requested to contact the State

Convener of KSFRA

BVV Subba Rao. Phone: 09886679088.

Email: babukadur44@gmail.com

Tools for Skeptical Thinking

Carl Sagan

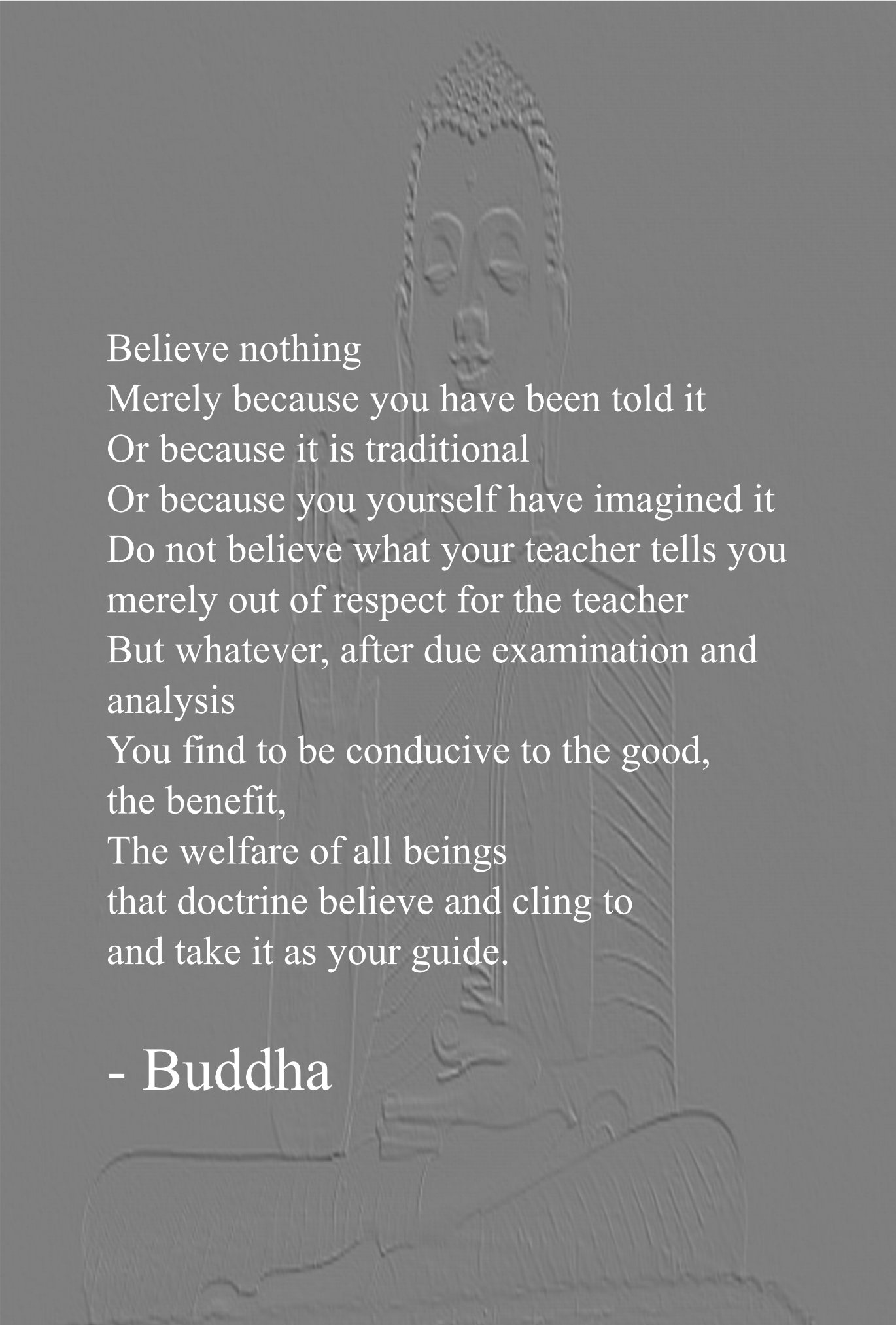
Carl Sagan's famous essay, *The Fine Art of Baloney Detection*, more or less encapsulates the basic tenets of Skeptical Thinking. The present article is an extract from the essay.

The full text can be found in one of Sagan's best-sellers *The Demonhaunted World: Science as a Candle in the Dark*.

- Wherever possible there must be independent confirmation of the "facts."
- Encourage substantive debate on the evidence by knowledgeable proponents of all points of view.
- Arguments from authority carry little weight—"authorities" have made mistakes in the past. They will do so again in the future. Perhaps a better way to say it is that in science there are no authorities; at most, there are experts.
- Spin more than one hypothesis. If there's something to be explained, think of all the different ways in which it could be explained. Then think of tests by which you might systematically disprove each of the alternatives. What survives, the hypothesis that resists disproof in this Darwinian selection among "multiple working hypotheses," has a much better chance of being the right answer than if you had simply run with the first idea that caught your fancy.
- Try not to get overly attached to a hypothesis just because it's yours. It's only a way station in the pursuit of knowledge. Ask yourself why you like the idea. Compare it fairly with the alternatives. See if you can find reasons for rejecting it. If you don't, others will.



- Quantify. If whatever it is you're explaining has some measure, some numerical quantity attached to it, you'll be much better able to discriminate among competing hypotheses. What is vague and qualitative is open to many explanations. Of course there are truths to be sought in the many qualitative issues we are obliged to confront, but finding them is more challenging.
- If there's a chain of argument, every link in the chain must work (including the premise) —not just most of them.
- Occam's Razor. This convenient rule-of-thumb urges us when faced with two hypotheses that explain the data equally well to choose the simpler.
- Always ask whether the hypothesis can be, at least in principle, falsified. Propositions that are untestable, unfalsifiable are not worth much. You must be able to check assertions out. Inveterate skeptics must be given the chance to follow your reasoning, to duplicate your experiments and see if they get the same result.



Believe nothing
Merely because you have been told it
Or because it is traditional
Or because you yourself have imagined it
Do not believe what your teacher tells you
merely out of respect for the teacher
But whatever, after due examination and
analysis
You find to be conducive to the good,
the benefit,
The welfare of all beings
that doctrine believe and cling to
and take it as your guide.

- Buddha